UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,912	04/27/2005	Giuseppe Montalbano	FR030009 US	4943

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EXAMINER
TIMORY, KABIR A

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
09/30/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 September 2010_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-17,19 and 20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _1-14 and 19-20_ is/are allowed.

6)☒ Claim(s) _15_ is/are rejected.

7)☒ Claim(s) _16-17_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Request for Continued Examination (RCE) Under 37 CFR 1.114

1.　　A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, <u>the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114</u>. Applicant's submission filed on 09/07/2010 has been entered.

Response to Arguments

2.　　This office action is in response to the amendment filed on 09/07/2010. Claims 1-17 and 19-20 are pending in this application and have been considered below. Claim 18 is cancelled by the applicant.

3.　　Applicant arguments regarding the rejection under 35 U.S.C. 103(a) as being unpatentable over Nilsson et al. (US 2003/0099216) in view of Huang et al. (US 6385185) and further in view of Jamal et al. (US 5533067) have been fully considered but they are **not persuasive**. The examiner thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meets the claimed limitation as rejected.

(1) Applicant's argument: "Independent claims 1 and 15 are allowable as they recite a combination of features including, *inter alia,* the estimation of the second propagation channel using coefficients Cp(t), delay Tp from the first channel estimation and a complex coefficient βp. More specifically, the second propagation channel (DPCH) uses part of the information that was used in the estimation of the first propagation channel (CPICH), i.e., Cp(t), delay Tp, and one additional parameter, i.e., the complex coefficient βp.

Examiner's response: In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **the estimation of the second propagation channel using coefficients Cp(t), delay Tp from the first channel estimation and a complex coefficient βp. More specifically, the second propagation channel (DPCH) uses part of the information that was used in the estimation of the first propagation channel (CPICH), i.e., Cp(t), delay Tp, and one additional parameter, i.e., the complex coefficient βp**) are not recited in the rejected <u>claim 15</u>. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns,* 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(2) Applicant's argument: "Huang fails to teach or suggest the estimation of the second propagation channel using coefficients Cp(t), delay Tp, and a complex coefficient βp as recited in independent claims 1 and 15".

Examiner's response: In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon

which applicant relies (i.e., **Huang fails to teach or suggest the estimation of the second propagation channel using coefficients Cp(t), delay Tp, and a complex coefficient βp as recited in independent claims 1 and 15**) are not recited in the rejected **claim 15**. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns,* 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(3) Applicant's argument: "That is, there is simply no discussion of using the correlation characteristics of two channels as claimed".

Examiner's response: In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **correlation characteristics of two channels as claimed**) are not recited in the rejected **claim 15**. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns,* 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsson et al. (US 2003/0099216) in view of Huang et al. (US 6385185) and further in view of Jamal et al. (US 5533067).

Regarding claim 15:

As shown in figures 1-6, Nilsson et al. disclose an apparatus for estimating a propagation channel in a presence of transmit beamforming by accounting for a structure of two logical channels referred to as a common channel and a dedicated physical channel (CPICH, DPCH) **(abstract, par 0007, lines 1-11, par 0033, lines 1-18)**, and based on a common structure of corresponding propagation channels, said dedicated physical channel (DPCH) comprising two sub-channels (DPDCH, DPCCH) **(302 in figure 3)**.

Nilsson et al. disclose all of the subject matter as described above except for specifically teaching a receiver providing channel estimation in a multipath environment to acquire a beamforming complex factor by modeling said propagation channels as a linear superposition of a finite number (p=1,.., P) of discrete multipath components following an uncorrelated-scattering wide-sense stationary model, and wherein a multipath component is characterized by a time-varying multipath complex coefficient $(Cp(t)$ and, $\beta pCp,$ $(t))$ and a delay (Tp).

However, Huang et al. in the same field of endeavor teach a receiver providing channel estimation in a multipath environment to acquire a beamforming complex factor by modeling said propagation channels as a linear superposition of a finite number

(p=1,.., P) of discrete multipath components following an uncorrelated-scattering wide-sense stationary model **(abstract, col 2, lines 27-67, col 4, lines 1-23, col 5, lines 39-52)**. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the channel estimation as taught by Huang et al. to modify the system and method of Nilsson et al. in order to improve the performance of the system.

Nilsson et al. and Huang et al. disclose all of the subject matter as described above except for specifically teaching wherein a multipath component is characterized by a time-varying multipath complex coefficient ($C_p(t)$ and, $\beta_p C_p$, (t)) and a delay *(Tp)*.

However, Jamal et al. in the same field of endeavor teach wherein a multipath component is characterized by a time-varying multipath complex coefficient ($C_p(t)$ and, $\beta_p C_p$, (t)) and a delay *(Tp)* **(col 6, lines 51-67, col 11, lines 42-63, col 17, lines 61-67, col 18, lines 1-5)**. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the channel estimation of time-varying channel as taught by Jamal et al. to modify the system and method of Nilsson et al. in order to solve issues such as rapidly fading radio channel of rapidly varying channel in the communication system **(col 4, lines 24-27)**.

Allowable Subject Matter

6.   Claims 1-14 and 19-20 and are allowed.

7.   Claims 16-17 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

8.   The following is a statement of reasons for the indication of allowable subject

matter:

The prior art of record, Nilsson et al. does not teach or suggest

means for building a second logical channel comprising a (DPCH) channel and a first logical channel comprising a (CPICH) channel for corresponding propagation channel instantaneous maximum likelihood ML channel multipath coefficient estimates ($\hat{c}_{dpch}(n)$) and ($\hat{c}_{cpich}(n)$);

means for performing interpolation of the above obtained (ML) instantaneous second (DPCH) and first (CPICH) logical channel corresponding propagation channel multipath coefficient estimates ($\hat{c}_{dpch}(n)$) and ($\hat{c}_{cpich}(n)$) to a lowest symbol rate of said second (DPCH) and first (CPICH) logical channels;

means for building an optimal linear prediction filter according to a joint second and first (DPCH-CPICH) channel maximum-a-posteriori criterion;

means for building a first sub-channel (DPDCH) multipath coefficient estimate ($\tilde{c}_{dpch-MAP}(k)$) by filtering with said optimal linear prediction filter with said interpolated ML instantaneous second (DPCH) and first (CPICH) logical channel corresponding propagation channel multipath coefficient estimates ($\hat{c}_{dpch}(n)$) and ($\hat{c}_{cpich}(n)$); and

means for interpolating said first sub-channel (DPDCH) multipath coefficient estimate ($\tilde{c}_{dpch-MAP}(k)$) to the second logical channel (DPCH) symbol rate when said symbol rate is lower than the first logical channel (CPICH) symbol rate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KABIR A. TIMORY whose telephone number is (571)270-1674. The examiner can normally be reached on 8:00 AM - 4:30 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kabir A Timory/
Examiner, Art Unit 2611
/Shuwang Liu/
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